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MEETING OF THE MARYLAND-VIRGINIA-DISTRICT OF COLUMBIA SECTION.

The Maryland-Virginia-District of Columbia Section of the Mathematical Association of America met at the U. S. Naval Academy, Annapolis, Maryland, May 3, 1919. Among those in attendance were the following members: R. N. Ashmun, International Boundary Commission; H. G. Avers, U. S. Coast and Geodetic Survey; Clara L. Bacon, Goucher College; C. C. Bramble, U. S. N. A.; J. A. Bullard, U. S. N. A.; Paul Capron, U. S. N. A.; G. R. Clements, U. S. N. A.; A. Cohen, Johns Hopkins University; G. H. Cresse, U. S. N. A.; L. S. Dederick, U. S. N. A.; Alexander Dillingham, U. S. N. A.; J. B. Eppes, U. S. N. A.; J. N. Galloway, U. S. N. A.; H. C. Gossard, U. S. N. A.; Angelo Hall, U. S. N. A.; W. M. Hamilton, U. S. Nautical Almanac Office; H. L. Hodgkins, George Washington University; L. S. Hulburt, Johns Hopkins University; W. W. Johnson, U. S. N. A.; A. E. Landry, Catholic University; J. J. Luck, University of Virginia; E. S. Mayer, U. S. N. A.; F. D. Murnaghan, Johns Hopkins University; J. R. Musselman, U. S. Food Commission; C. H. Rawlins, Jr., U. S. N. A.; M. R. Richardson, U. S. N. A.; R. E. Root, U. S. N. A.; W. F. Shenton, U. S. N. A.; Clara E. Smith, Goucher College; H. Ivah Thomsen, Johns Hopkins University; John Tyler, U. S. N. A.

The program consisted of a forenoon and an afternoon session, and contained the following papers:

FORENOON SESSION—SYMPOSIUM ON “MATHEMATICS FOR ENGINEERING STUDENTS.”

- (1) Paper, Prof. Abraham Cohen, Johns Hopkins University (Mathematics);
- (2) Discussion, Prof. Alexander Dillingham, U. S. N. A. (Mathematics);
- (3) Paper, Prof. T. J. MacKavanagh, Catholic University (Engineering), by invitation;
- (4) Discussion, Prof. L. A. Doggett, U. S. N. A. (Engineering), by invitation;
- (5) General Discussion.

AFTERNOON SESSION.

- (6) “Circular parts, the general case.”—Prof. W. W. Johnson, U. S. N. A.
- (7) “A study of map projections in general.”—Mr. Oscar S. Adams, U. S. Coast and Geodetic Survey.

The visitors in attendance were the guests of the members of the Naval Academy Department of Mathematics at a delightful luncheon served at one o'clock at The Sign of the Goat Inn.

At the beginning of the afternoon session the following officers were elected for the ensuing year:

Chairman, Professor R. E. Root, U. S. Naval Academy.

Secretary-Treasurer, OSCAR S. ADAMS, U. S. Coast and Geodetic Survey.

Member of the Executive Committee, Prof. CLARA L. BACON, Goucher College.

After the program the visitors were shown about the beautiful grounds and buildings or were taken to see some of the various athletic events that were in progress.

OSCAR S. ADAMS, *Secretary*.

THE GROWTH OF THE SOLAR SYSTEM.

By WILLIAM DUNCAN MACMILLAN, University of Chicago.

Since the sun with its attendant planets is journeying through space with a speed of about 12 miles per second and since there are large regions of space which are visibly nebulous it follows that at rare intervals the sun must pass through such nebulosity and add to its mass. This nebulosity varies from a relatively great density such as occurs in Andromeda and regions in Orion to a density so low that it can be detected only by photographic means, as for example, the region of the Pleiades. The direct evidence ends, perhaps, with the photographs of these regions of low visibility, but the apparently great variation in nebular density compels us to admit the existence of nebulosity below the bounds of visibility even photographically; and from the physical nature of these objects we cannot doubt that regions of very low density are much more extensive than regions of higher density.

In addition to nebulosity which is self-luminous the phenomenon of dark regions with apparently luminous back grounds is interpreted by Barnard and others as indicating the existence of nebulosity which is not self-luminous. How extensive these regions of dark nebulosity are we have but little means of knowing for it would be only rarely that they would be projected upon luminous back-grounds, but such evidence as there is indicates that they are rather extensive.

In addition to matter in a distinctly nebulous form one can scarcely escape postulating the existence of isolated solid fragments, for it is easy to see how such solid fragments can occur. In the course of time—very long, perhaps—some star will pay us a visit, with the result of considerable disturbance to our present orderly system. How serious this disturbance will be will depend, naturally, upon the particular circumstances under which it occurs, and the character of the system which does the visiting. A not impossible result would be to throw one or more of the planets out into space, and it seems almost certain that some of our comets and planetoids and some of our very numerous meteors would receive that kind of treatment. Our sun would doubtless reciprocate upon the other system, so that one of the final results of such a visit would be some loose fragments in space.

Indeed it is not easy to avoid the idea that comets and their resultant meteors